

RECEIVED

Page 1 of 7

JUN 20 2002

TECH CENTER 1600/2900



OIPE

#27/jaw
07.02.02

RAW SEQUENCE LISTING

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:55

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

C--> 1 <110> APPLICANT: Harrington, et al.
C--> 2 <120> TITLE OF INVENTION: Mammalian Flap Specific-Endonuclease
3 <130> FILE REFERENCE: 9584-017
C--> 4 <140> CURRENT APPLICATION NUMBER: US/09/586,744B
C--> 5 <141> CURRENT FILING DATE: 2002-06-02
6 <160> NUMBER OF SEQ ID NOS: 74
7 <170> SOFTWARE: PatentIn version 3.0
9 <210> SEQ ID NO: 1
10 <211> LENGTH: 380
11 <212> TYPE: PRT
12 <213> ORGANISM: Homo sapiens
13 <400> SEQUENCE: 1

14	Met	Gly	Ile	Gln	Gly	Leu	Ala	Lys	Leu	Ile	Ala	Asp	Val	Ala	Pro	Ser
15	1				5					10					15	
16	Ala	Ile	Arg	Glu	Asn	Asp	Ile	Lys	Ser	Tyr	Phe	Gly	Arg	Lys	Val	Ala
17				20					25					30		
18	Ile	Asp	Ala	Ser	Met	Ser	Ile	Tyr	Gln	Phe	Leu	Ile	Ala	Val	Arg	Gln
19			35					40						45		
20	Gly	Gly	Asp	Val	Leu	Gln	Asn	Glu	Glu	Gly	Glu	Thr	Thr	Ser	His	Leu
21		50					55					60				
22	Met	Gly	Met	Phe	Tyr	Arg	Thr	Ile	Arg	Met	Met	Glu	Asn	Gly	Ile	Lys
23	65					70				75					80	
24	Pro	Val	Tyr	Val	Phe	Asp	Gly	Lys	Pro	Pro	Gln	Leu	Lys	Ser	Gly	Glu
25					85					90					95	
26	Leu	Ala	Lys	Arg	Ser	Glu	Arg	Arg	Ala	Glu	Ala	Glu	Lys	Gln	Leu	Gln
27				100					105					110		
28	Gln	Ala	Gln	Ala	Ala	Gly	Ala	Glu	Gly	Glu	Val	Glu	Lys	Phe	Thr	Lys
29			115					120						125		
30	Arg	Leu	Val	Lys	Val	Thr	Lys	Gln	His	Asn	Asp	Glu	Cys	Lys	His	Leu
31		130					135					140				
32	Leu	Ser	Leu	Met	Gly	Ile	Pro	Tyr	Leu	Asp	Ala	Pro	Ser	Glu	Ala	Glu
33	145					150				155				160		
34	Ala	Ser	Cys	Ala	Ala	Leu	Val	Lys	Ala	Gly	Lys	Val	Tyr	Ala	Ala	Ala
35				165						170				175		
36	Thr	Glu	Asp	Met	Asp	Cys	Leu	Thr	Phe	Gly	Ser	Pro	Val	Leu	Met	Arg
37			180						185					190		
38	His	Leu	Thr	Ala	Ser	Glu	Ala	Lys	Lys	Leu	Pro	Ile	Gln	Glu	Phe	His
39		195						200					205			
40	Leu	Ser	Arg	Ile	Leu	Gln	Glu	Leu	Gly	Leu	Asn	Gln	Glu	Gln	Phe	Val
41		210					215						220			
42	Asp	Leu	Cys	Ile	Leu	Leu	Gly	Ser	Asp	Tyr	Cys	Glu	Ser	Ile	Arg	Gly
43	225					230				235				240		
44	Ile	Gly	Pro	Lys	Arg	Ala	Val	Asp	Leu	Ile	Gln	Lys	His	Lys	Ser	Ile

ENTERED

RAW SEQUENCE LISTING

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:55

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

```

45          245          250          255
46  Glu Glu Ile Val Arg Arg Leu Asp Pro Asn Lys Tyr Pro Val Pro Glu
47          260          265          270
48  Asn Trp Leu His Lys Glu Ala His Gln Leu Phe Leu Glu Pro Glu Val
49          275          280          285
50  Leu Asp Pro Glu Ser Val Glu Leu Lys Trp Ser Glu Pro Asn Glu Glu
51          290          295          300
52  Glu Leu Ile Lys Phe Met Cys Gly Glu Lys Gln Phe Ser Glu Glu Arg
53          305          310          315          320
54  Ile Arg Ser Gly Val Lys Arg Leu Ser Lys Ser Arg Gln Gly Ser Thr
55          325          330          335
56  Gln Gly Arg Leu Asp Asp Phe Phe Lys Val Thr Gly Ser Leu Ser Ser
57          340          345          350
58  Ala Lys Arg Lys Glu Pro Glu Pro Lys Gly Ser Thr Lys Lys Lys Ala
59          355          360          365
60  Lys Thr Gly Ala Ala Gly Lys Phe Lys Arg Gly Lys
61          370          375          380
63 <210> SEQ ID NO: 2
64 <211> LENGTH: 1144
65 <212> TYPE: DNA
66 <213> ORGANISM: Homo sapiens
67 <400> SEQUENCE: 2
68  atgggaattc aaggcctggc caaactaatt gctgatgtgg cccccagtgc catccgggag 60
69  aatgacatca agagctactt tggccgtaag gtggccattg atgcctctat gagcatttat 120
70  cagttcctga ttgctgttcg ccaggggtggg gatgtgctgc agaatgagga gggtagagacc 180
71  accagccacc tgatgggcat gttctaccgc accattcgca tgatggagaa cggcatcaag 240
72  cccgtgtatg tctttgatgg caagccgcca cagctcaagt caggcgagct ggccaaacgc 300
73  agtgagcggc gggctgaggc agagaagcag ctgcagcagg ctcaggctgc tggggccgag 360
74  caggagggtg aaaaattcac taagcggtc gtgaagggtc ctaagcagca caatgatgag 420
75  tgcaaacatc tgctgagcct catgggcac cttatcttg atgcaccag tgaggcagag 480
76  gccagctgtg ctgccctggt gaaggctggc aaagtctatg ctgcggtac cgaggacatg 540
77  gactgcctca ccttcggcag ccctgtgcta atgcgacacc tgactgccag tgaagccaaa 600
78  aagctgccaa tccaggaatt ccacctgagc cggattctgc aggagctggg cctgaaccag 660
79  gaacagtttg tggatctgtg catcctgcta ggcagtgact actgtgagag tatccgggggt 720
80  attgggcca agcgggctgt ggacctcatc cagaagcaca agagcatcga ggagatcgtg 780
81  cggcgacttg accccaacaa gtaccctgtg ccagaaaatt ggctccacaa ggaggctcac 840
82  cagctcttct tggaaacctga ggtgctggac ccagagtctg tggagctgaa gtggagcgag 900
83  ccaaatgaag aagagctgat caagttcatg tgtggtgaaa agcagttctc tgaggagcga 960
84  atccgcagtg gggtaagag gctgagtaag agccgccaa ggcagaccca gggccgcctg 1020
85  gatgatttct tcaaggtgac cggctcactc tcttcagcta agcgcaagga gccagaaccc 1080
86  aagggatcca ctaagaagaa ggcaaagact ggggcagcag ggaagtttaa aaggggaaaa 1140
87  taaa 1144
89 <210> SEQ ID NO: 3
90 <211> LENGTH: 377
91 <212> TYPE: PRT
92 <213> ORGANISM: Mus musculus
93 <400> SEQUENCE: 3
94  Met Gly Ile His Gly Leu Ala Lys Leu Ile Ala Asp Val Ala Pro Ser
95  1 5 10 15

```

RAW SEQUENCE LISTING

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:55

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

```

96   Ala Ile Arg Glu Asn Asp Ile Lys Ser Tyr Phe Gly Arg Lys Val Ala
97           20                25                30
98   Ile Asp Ala Ser Met Ser Ile Tyr Gln Phe Leu Ile Ala Val Arg Gln
99           35                40                45
100  Gly Gly Asp Val Leu Gln Asn Glu Glu Gly Glu Thr Ser Leu Met
101           50                55                60
102  Gly Met Phe Tyr Arg Thr Ile Arg Met Glu Asn Gly Ile Lys Pro Val
103          65                70                75                80
104  Tyr Val Phe Asp Gly Lys Pro Pro Gln Leu Lys Ser Gly Glu Leu Ala
105                85                90                95
106  Lys Arg Ser Glu Arg Arg Ala Glu Ala Glu Lys Gln Leu Gln Gln Ala
107                100               105               110
108  Gln Glu Ala Gly Met Glu Glu Val Glu Lys Phe Thr Lys Arg Leu Val
109                115               120               125
110  Lys Val Thr Lys Gln His Asn Asp Glu Cys Lys His Leu Leu Ser Leu
111                130               135               140
112  Met Gly Ile Pro Tyr Leu Asp Ala Pro Ser Glu Ala Glu Ala Ser Cys
113          145                150                155                160
114  Ala Ala Leu Ala Lys Ala Gly Lys Val Tyr Ala Ala Ala Thr Glu Asp
115                165                170                175
116  Met Asp Cys Leu Thr Phe Gly Ser Pro Val Leu Met Arg His Leu Thr
117                180               185               190
118  Ala Ser Glu Ala Lys Lys Leu Pro Ile Gln Glu Phe His Leu Ser Arg
119                195               200               205
120  Val Leu Gln Glu Leu Gly Leu Asn Gln Glu Gln Phe Val Asp Leu Cys
121                210               215               220
122  Ile Leu Leu Gly Ser Asp Tyr Cys Glu Ser Ile Arg Gly Ile Gly Ala
123          225                230                235                240
124  Lys Arg Ala Val Asp Leu Ile Gln Lys His Lys Ser Ile Glu Glu Ile
125                245                250                255
126  Val Arg Arg Leu Asp Pro Ser Lys Tyr Pro Val Pro Glu Asn Trp Leu
127                260               265               270
128  His Lys Glu Ala Gln Gln Leu Phe Leu Glu Pro Glu Val Val Asp Pro
129                275               280               285
130  Glu Ser Val Glu Leu Lys Trp Ser Glu Pro Asn Glu Glu Glu Leu Val
131                290               295               300
132  Lys Phe Met Cys Gly Glu Lys Gln Phe Ser Glu Glu Arg Ile Arg Ser
133          305                310                315                320
134  Gly Val Lys Arg Leu Ser Lys Ser Arg Gln Gly Ser Thr Gln Gly Arg
135                325                330                335
136  Leu Asp Asp Phe Phe Lys Val Thr Gly Ser Leu Ser Ser Ala Lys Arg
137                340               345               350
138  Lys Glu Pro Glu Pro Lys Gly Ser Ala Lys Lys Lys Ala Lys Thr Gly
139                355               360               365
140  Gly Ala Gly Lys Phe Arg Arg Gly Lys
141          370                375
143 <210> SEQ ID NO: 4
144 <211> LENGTH: 1930
145 <212> TYPE: DNA

```

RAW SEQUENCE LISTING

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:55

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

```

146 <213> ORGANISM: Mus musculus
147 <400> SEQUENCE: 4
148 atgggaattc acggccttgc caaactaatt gctgatgtgg cccccagtgc catccgtgag 60
149 aatgacatca agagctactt tggtcgtaaa gtggccatcg atgcctccat gagcatctac 120
150 cagttcctga ttgctgttcg tcagggtggg gatgtgctgc agaacgagga gggtagagacc 180
151 accagcctga tgggcatgtt atggcaaacc atccgcatgg agaatggcat caagcctgtg 240
152 tacgtctttg atggcaaacc accacagctg aagtcaggcg agctggccaa gcgcagtgag 300
153 aggcgcgcgg aggcctgagaa gcaactgcag caggctcagg aggcctgggag ggaggaggag 360
154 gtggagaagt tcaccaagag gctcgtgaag gtcaccaagc aacacaatga tgagtgcaaa 420
155 cacctcgtga gcctcatggg catcccttac cttgatgcac ccagcgaggc agaggccagc 480
156 tgtgctgccc tggcaaaggc tggcaaagtc tatgctgcgg ccacggagga catggactgc 540
157 ctcaactttg gcagccccgt gctaattgca cacttaactg ccagtgaggc caagaagctg 600
158 cccatccaag agttccatct gagccgcgtc ctgcaggagc tgggtctgaa ccaggagcag 660
159 tttgtggatc tgtgcacact gctgggtagc gactactgag agagcatccg tggcattggc 720
160 gccaaagcgg ctgtggatct catccagaaa cataagagca tcgaggagat cgtgaggcgg 780
161 ctggacccca gcaagtaccc cgttccagag aactggctcc acaaggaagc ccagcagctc 840
162 ttcttgagc cagaagtagt ggacccagag tctgtggagc tgaagtggag cgagccaaat 900
163 gaagaagagt tgggtcaaatt tatgtgtggt gaaaagcagt tttctgaaga gcgaattcgc 960
164 agtgggggtca agcggctgag taagagccgc cagggcgagca cccaggggacg cctcgatgat 1020
165 ttcttcaagg tgacaggctc actctcctca gctaagcgca aggagccaga acccaagggg 1080
166 cctgctaaga agaaagcaaa gactggggga gcgggggaagt tccgaagggg aaaataaacc 1140
167 tgtccttccc ctccactgtc cttgacccca ggctgtctat ctgttttgta ccctgcgctg 1200
168 cagcacatcc ctcttgtccc tcgtcttgag gagagttcat tgcttccagc gctcgccttc 1260
169 agagctttcc ctctcttgac cctgtggcag gaaggccgta gctctgcttt ttctcatttt 1320
170 tagctcagga aagatgtcag gctcaaacca cttctcaggt taatggacac tgtagtcatt 1380
171 gttctgtgca actgcgagca atgtcttaag gaagaagaag ataaagccgg gagcgaggct 1440
172 ggagatagtt tcccagctgg ccagctggtg gaggagaggt gactagaacc tgactgacta 1500
173 ctgctccttc taatttcaact gtccctgaaa gatgcccatc agcctgggat tcgctgatgg 1560
174 aagaactgca aagagacgca gcagagagaa gtctggctga caacagattt agtactgacc 1620
175 agctgatttt tgtgggcaga aatttgaact tgcctgcctg tgagtccagt agttgtgcag 1680
176 ggagtgagat ggcagtgttt aagttttgat ttgtagtttt ttgtttttgt ctctcccttc 1740
177 tccagtgttg gggattgacc ccagggcaaa ggcattaagt gtgccactga cctgtgcctc 1800
178 caagtgatgt tctgacagcc tttctgaggc aatcaattga attgaggttt tgggagaaga 1860
179 aactgttggt cataggctat ttctatttta aaagatgtga agagaaaaaa aaaacaataa 1920
180 aattataaaa 1930
182 <210> SEQ ID NO: 5
183 <211> LENGTH: 382
184 <212> TYPE: PRT
185 <213> ORGANISM: Saccharomyces cerevisiae
186 <400> SEQUENCE: 5
187 Met Gly Ile Lys Gly Leu Asn Ala Ile Ile Ser Glu His Val Pro Ser
188 1 5 10 15
189 Ala Ile Arg Lys Ser Asp Ile Lys Ser Phe Phe Gly Arg Lys Val Ala
190 20 25 30
191 Ile Asp Ala Ser Met Ser Leu Tyr Gln Phe Leu Ile Ala Val Arg Gln
192 35 40 45
193 Gln Asp Gly Gly Gln Leu Thr Asn Glu Ala Gly Glu Thr Thr Ser His
194 50 55 60
195 Leu Met Gly Met Phe Tyr Arg Thr Leu Arg Met Ile Asp Asn Gly Ile

```

RAW SEQUENCE LISTING

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:55

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

196	65	70	75	80
197	Lys Pro Cys Tyr Val Phe Asp Gly Lys Pro Pro Asp Leu Lys Ser His			
198		85	90	95
199	Glu Leu Thr Lys Arg Ser Ser Arg Arg Val Glu Thr Glu Lys Lys Leu			
200		100	105	110
201	Ala Glu Ala Thr Thr Glu Leu Glu Lys Met Lys Gln Glu Arg Arg Leu			
202		115	120	125
203	Val Lys Val Ser Lys Glu His Asn Glu Glu Ala Gln Lys Leu Leu Gly			
204		130	135	140
205	Leu Met Gly Ile Pro Tyr Ile Ile Ala Pro Thr Glu Ala Glu Ala Gln			
206		145	150	155
207	Cys Ala Glu Leu Ala Lys Lys Gly Lys Val Tyr Ala Ala Ala Ser Glu			
208		165	170	175
209	Asp Met Asp Thr Leu Cys Tyr Arg Thr Pro Phe Leu Leu Arg His Leu			
210		180	185	190
211	Thr Phe Ser Glu Ala Lys Lys Glu Pro Ile His Glu Ile Asp Thr Glu			
212		195	200	205
213	Leu Val Leu Arg Gly Leu Asp Leu Thr Ile Glu Gln Phe Val Asp Leu			
214		210	215	220
215	Cys Ile Met Leu Gly Cys Asp Tyr Cys Glu Ser Ile Arg Gly Val Gly			
216		225	230	235
217	Pro Val Thr Ala Leu Lys Leu Ile Lys Thr His Gly Ser Ile Glu Lys			
218		245	250	255
219	Ile Val Glu Phe Ile Glu Ser Gly Glu Ser Asn Asn Thr Lys Trp Lys			
220		260	265	270
221	Ile Pro Glu Asp Trp Pro Tyr Lys Gln Ala Arg Met Leu Phe Leu Asp			
222		275	280	285
223	Pro Glu Val Ile Asp Gly Asn Glu Ile Asn Leu Lys Trp Ser Pro Pro			
224		290	295	300
225	Lys Glu Lys Glu Leu Ile Glu Tyr Leu Cys Asp Asp Lys Lys Phe Ser			
226		305	310	315
227	Glu Glu Arg Val Lys Ser Gly Ile Ser Arg Leu Lys Lys Gly Leu Lys			
228		325	330	335
229	Ser Gly Ile Gln Gly Arg Leu Asp Gly Phe Phe Gln Val Val Pro Lys			
230		340	345	350
231	Thr Lys Glu Gln Leu Ala Ala Ala Lys Arg Ala Gln Glu Asn Lys			
232		355	360	365
233	Lys Leu Asn Lys Asn Lys Asn Lys Val Thr Lys Gly Arg Arg			
234		370	375	380
236	<210> SEQ ID NO: 6			
237	<211> LENGTH: 1149			
238	<212> TYPE: DNA			
239	<213> ORGANISM: Saccharomyces cerevisiae			
240	<400> SEQUENCE: 6			
241	atgggtatta aaggtttgaa tgcaattata tcggaacatg ttccctctgc tatcaggaaa	60		
242	agcgatatca agagcttttt tggcagaaaag gttgccatcg atgcctctat gtctctatat	120		
243	cagtttttaa ttgctgtaag acagcaagac ggtgggcagt tgaccaatga agccggtgaa	180		
244	acaacgtcac acttgatggg tatgttttat aggacactga gaatgattga taacggtatc	240		
245	aagccttggt atgtcttcga cggcaaacct ccagctttga aatctcatga gttgacaaa	300		

VERIFICATION SUMMARY

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:56

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

L:4 M:270 C: Current Application Number differs, Wrong Format

L:5 M:271 C: Current Filing Date differs, Replaced Current Filing Date

STATISTICS SUMMARY

DATE: 05/20/2002

PATENT APPLICATION: US/09/586,744B

TIME: 14:17:56

Input Set : N:\Crf3\05072002\I586744C.raw

Output Set: N:\CRF3\05202002\I586744B.raw

Application Serial Number: US/09/586,744B

Alpha or Numeric: Numeric

Application Class:

Application File Date: 06-02-2002

Art Unit: OIPE

Software Application: PatentIN3.0

Total Number of Sequences: 74

Total Nucleotides: 10077

Total Amino Acids: 2193

Number of Errors: 0

Number of Warnings: 0

Number of Corrections: 2

MESSAGE SUMMARY

270 C: 1 (Current Application Number differs)

271 C: 1 (Current Filing Date differs)